



# ServeRAID-MR10is VAULT SAS/SATA Controller offers a high-performance SAS and SATA host bus adapter for direct attach storage

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## At a glance

ServeRAID™ Vault protects against sensitive data theft. ServeRAID-MR10is VAULT is a RAID controller with built-in crypto engine to encrypt data written to the hard drives. With an easy to use GUI it simplifies the complexity of key management, setup and configuration.

The ServeRAID-MR10is VAULT SAS/SATA PCIe Controller (44E8695) kit enables you to use data encryption for internal system RAID 0, 1, 10, 5, 50, 6, or 60

Features include the following:

- Stored data encryption
- Up to 3 Gb/second of performance throughput for each port
- LSI1078DE controller
- 2 x4 internal mini-SAS SFF-8087 connectors
- Global hot spare and rebuild
- Supported on x3200 M2, x3250 M2, x3350, x3400, x3500, x3650, x3655, x3850 M2, and x3950 M2

The ServerAID MR10 is VAULT SAS/SATA Controller is the ideal solution for all servers and workstations that need stored data encryption in disk connectivity for data backup and mission-critical applications.

For technical support, call the IBM® Support Center at 800-IBM-SERV (426-7378) or request technical information via the Web site at

<http://www.ibm.com/pc/support>

## Overview

ServeRAID-MR10is VAULT is a RAID controller with built-in crypto engine to encrypt data written to the hard drives. With an easy to use GUI it simplifies the complexity of key management, setup and configuration.

This leading edge implementation helps lower the total cost of securing stored data. This controller benefits the following usage scenarios:

- Robust protection against theft of sensitive data on stolen harddrives
  - In an unsecure physical environment
  - From insiders in a secure location

- Lowered cost of drive disposal or redeployment by making the stored data more difficult to access
- Enhanced encryption security and performance over software encryption solutions

Sensitive data can include patient records in medical offices, hospitals, and insurance companies, credit card or transaction data at retail stores, restaurants, and so on, bank records, personnel records, intellectual property, financial records and others.

ServeRAID-MR10is VAULT SAS/SATA Controller is a PCIe RAID controller with stored data encryption for Internal System RAID 0, 1, 10, 5, 50, 6, 60. This full height, half length adapter utilizes an LSI 1078DE controller with an x8 PCI Express host interface, eight internal SAS/SATA II 3 Gb/s ports and battery backed 256 MB 72 bit ECC DDR2 cache. MegaRAID Storage Manager (MSM), included with ServeRAID-MR10is, is a robust RAID and encryption management, configuration, and reporting application. The included battery enhances the ServeRAID-MR10is controller's performance by allowing data written to disk to be cached in battery-backed high-speed memory. The battery provides protection of cached data during an unexpected power outage.

The ServeRAID-MR10 VAULT SAS/SATA PCIe Controllers are covered by a one-year, limited warranty. Batteries are consumables; therefore, batteries are not covered under this warranty.

Features, functions, and benefits include:

- SAS/SATA II
- PCIe x8 bus
- RAID 0, 1, 10, 5, 50, 6, 60
- Stored data encryption
- Fixed 256 MB 72-bit BBU DDR2 cache memory
- Up to 72 hours cache backup with battery standard
- 2 x4 internal mini-SAS SFF-8087 connectors
- Up to 3 Gb/second of performance throughput for each port
- LSI 1078DE controller
- Global hot spare and rebuild
- Supported utilities: MegaRAID Storage Manager (MSM), IBM Director, Dynamic Systems Analysis (DSA), Command Line Interface (CLI), and flash drive
- Support on x3200 M2, x3250 M2, x3350, x3400, x3500, x3650, x3655, x3850 M2, and x3950 M2 servers

For information on the IBM Statement of Limited Warranty, visit

[http://www.ibm.com/servers/support/machine\\_warranties/](http://www.ibm.com/servers/support/machine_warranties/)

Alternatively, this information is also available by contacting your IBM representative or reseller. Copies are available upon request.

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## Key prerequisites

Supported IBM System x™ server with an available PCI Express expansion slot

### **Planned availability date**

September 12, 2008

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## Description

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This ServeRAID-MR10is VAULT SAS/SATA Controller offers full hardware RAID 0, 1, 10, 5, 50, 6, 60 function. It can handle medium- to large-capacity server storage applications when you connect one internal x4 SFF-8087 connector to the server's internal storage.

SATA and SAS hard drives are supported with all major operating systems including Microsoft® Windows® and Linux®.

### **Investment protection and ease of use**

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- Regulatory and data privacy compliance requirements driven by HIPAA, SOX, Payment Card Industry, Canadian Electronic Evidence Act, Financial Services Authority (UK), SEC 17a-4, AIPA (Italy),
- Loss of customer
- Loss of company reputation
- High cost associated with data breach

ServeRAID-MR10is is supported for internal HDD attach in hot-swap SAS and SATA models of several System x servers. Storage management is enabled through ServeRAID Manager software, which offers high-performance data protection in an easy-to-use package. With rigorous testing by IBM through the ServerProven® program, you can maintain a high degree of confidence that your System x server storage subsystem is compatible and will function reliably.

### **Compatibility**

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- Support for popular network operating systems
- ServerProven testing: Verifies servers, HDDs, and the ServeRAID-MR10is function properly
- IBM simple-swap and high-speed SAS and SATA cables
- Supported utilities are MSM, IBM Director, DSA, CLI, and flash drive

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## Additional information

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All offers are subject to availability. IBM reserves the right to alter product offerings and specifications at any time without notice. IBM is not responsible for photographic or typographic errors.

IBM makes no representation or warranty regarding third-party products or services.

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## Product number

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Options SEOs

Description	SEO number
ServeRAID MR10is VAULT SAS/SATA RAID Controller	44E8695

### **ServeRAID-MR10is VAULT SAS/SATA RAID Controller (44E8695)**

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### **Technical information**

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#### **Performance specifications**

- Functions as a HDD RAID controller
- RAID levels: 0, 1, 10, 5, 50, 6, 60
- Up to 3 GB/second of performance throughput for each port

- LSI1078DE controller
- Global hot spare and rebuild and Restore functions
- 2 x4 internal mini-SAS SFF-8087 connector
- Stored data encryption
- Fixed 256 MB 72-bit BBU DDR2 cache memory
- Up to 72 hours cache backup with battery standard
- SAS/SATA II
- PCIe x8 bus

#### ***Physical specifications***

Height: 68.86 mm (2.71 in)  
 Width: 169.5 mm (6.67 in)  
 Depth: 16.6 mm (0.65 in)  
 Weight: 0.170 kg (0.375 lb)

**Note:** All measurements are approximate.

#### ***Operating environment***

- Temperature
  - 10 to 35° (50 to 95° F) at 0 to 914 m (0 to 3000 ft)
  - 10 to 32° C (50 to 90° F) at 914 m to 2,133 (3,000 to 7,000 ft)
- Relative humidity: 8% to 80%, non-condensing

#### ***Agency approvals***

##### Safety

- UL
- cUL
- IEC60950

##### EMC

- FCC
- TUV
- VDE
- CE
- VCCI
- BSMI
- C-Tick
- MIC

#### ***Energy Star compliance***

Is this product Energy Star Compliant? No

Note: The Energy Star emblem does not represent EPA endorsement of any product or service.

#### ***Hardware requirements***

The 44E8695 is supported on the following IBM platforms:

System name	x3200 M2	Machine type	4367	Model	A11
			4368		A11
	x3250 M2		4190		A11
			4191		A11
			4194		A11
	x3350		4192		A11
			4193		A11

x3400	7975	A11
x3500	7976	A11
x3650	7977	A11
x3655	7979	A11
x3850 M2	7985	A11
x3950 M2	8864	A11
	7141	A11

### ***Software requirements***

Support for all major operating systems:

- Microsoft Windows
- Linux Red Hat
- VMWare
- SUSE Linux

### ***Compatibility***

For latest compatibility information, visit

<http://www.ibm.com/servers/eserver/serverproven/compat/us/>

**Note:** Some configurations may not be compatible.

### ***Limitations***

Remote enablement kit for x3650 and x3655 systems

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### ***Planning information***

None

Additional cable orders required: No

Approximate installation time: 20 minutes

### ***Packaging***

One box

### ***Shipment group***

- ServRAID MR10is controller
- SAS cable
- Quick install
- Battery
- Remote battery cable
- HDD ID label
- Safety flyer

### ***Packaging dimensions and weight***

- Height: 68.8 mm (2.71 in)
- Width: 169.5 mm (6.67 in)
- Depth: 16.6 mm (0.65 in)
- Weight: .619 kg (1.345 lb)

**Note:** All measurements are approximate.

## **Security, auditability, and control**

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Security and auditability features of this product are:

This product uses the security and auditability features of the host hardware, software, and application software.

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## **Terms and conditions**

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### **Features and options**

Field installable	Yes
Customer setup	Yes
Warranty period*	1 year
Service type (CCE/CCR/CRU)	CRU
Maintenance agreement	No
Optional upgrade	No
Licensed programs	No

\* To obtain copies of the IBM Statement of Limited Warranty, contact your reseller or call IBM.

In the United States, call 800-426-7378, or write to:

Warranty Information  
P.O. Box 12195  
Research Triangle Park, NC 27709  
Attn: Dept UF2A/B203.

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IBM may release changes to the machine code. IBM plans to make the machine code changes available for download from the IBM System x technical support Web site

<http://www-304.ibm.com/systems/support/>

If the machine does not function as warranted and your problem can be resolved through your application of downloadable Machine Code, you are responsible for downloading and installing these designated Machine Code changes as IBM specifies. If you would prefer, you may request IBM to install downloadable Machine Code changes; however, you may be charged for that service.

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### **Help and service information - Features and options**

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During the warranty period, you can obtain technical support using the IBM online services or by calling the IBM Support Center at 800-426-7378, 24 hours a day, 7 days a week, to answer any questions regarding your new IBM option. Response time will vary depending on the number and nature of calls received. If you need have no warranty service, return or exchange is available. In addition, if your IBM option is installed in an IBM computer, you may be entitled to service at your location. For general questions related to the use of your options, fee-based support is available. Your technical support representative can help you determine the best alternative.

### **Accessing IBM online services**

Visit

<http://www.ibm.com/support>

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### **Placing the call to IBM**

Within the United States, call the IBM Support Center at 800-426-7378.

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## **Prices**

For current System x prices, contact IBM at 888-Shop-IBM (746-7426) or visit

<http://www-03.ibm.com/systems/x/>

Options SEOs

Description	SEO number
ServeRAID-MR10iS VAULT SAS/SATA Controller	44E8695

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